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## ROYAL GARDENS, KEW.

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### BULLETIN

OF

### MISCELLANEOUS INFORMATION.

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No. 42.]

JUNE.

[1890.

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#### CXLVII.—COMPRESSED OR TABLET TEA.

In January of the present year two samples of compressed or tablet tea were presented to the Museum by Colonel Alexander Moncrieff, C.B., accompanied by the following letter addressed to Sir Joseph Hooker.

15, Vicarage Gate, Kensington, W.,  
24 January 1890.

MY DEAR SIR JOSEPH,

I HAD almost forgotten to send you the specimens of "tablet tea" which I spoke of at the Athenæum, but as soon as I saw it just now I recollected my promise, and here it is.

My Chinese correspondent, Mr. Gardiner, Her Majesty's Consul at Hankow, informs me that this tablet tea is in use throughout Russian Siberia. It is manufactured at Hankow, "the larger tablet from common tea dust, which adheres after being steamed in a pudding-cloth for a moment, by hand pressure. The quantity of the dust required is placed in the bag, and, after being steamed, is poured into the wood mould, and is pressed to the required consistency by lever or a heavy mallet wielded by one of the labourers. The cost of the

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1890.

*Price Twopence.*



“ common tea dust is 3½ Chinese ozs. silver (say, 15s.) per pecul =  
 “ 133 lbs. avoirdupois. The cost of the manufacture, export, duty,  
 “ packing, &c. amounts to a further 15s. a pecul. The bulk when  
 “ packed is only one-sixth of the bulk of an equal weight of ordinary  
 “ tea as ordinarily packed.

“ The small tablet is made of the finest tea dust, the selection of  
 “ which is made with great care. The original cost of this tea here is  
 “ about 84s. a pecul. It is manufactured into tablets by steam machinery  
 “ in a steel mould. The proper amount of dust is poured into the  
 “ mould dry without steaming, and the pressure brought to bear upon  
 “ it is two tons per tablet. Considerable care is required in the manu-  
 “ facture and packing of this tablet tea, and the cost is comparatively  
 “ great.

“ Besides this tablet tea used in Russian Siberia, there is a pressed  
 “ tea called brick tea used in Chinese Mongolia and Tibet. This is  
 “ made of the whole of the leaf with stalks, and is about the size and  
 “ shape of an ordinary brick. I have not seen this tea manufactured.  
 “ It is made, I know, by Chinese in a very simple way.”

This is all the information I got with the specimens.

I am, &c.

(Signed) A. MONCRIEFF.

Sir Joseph Hooker, K.C.S.I., F.R.S., &c.

The manufacture of compressed tea at Hankow, referred to in the above letter, seems to be an industry of considerable importance, and is fully detailed in an article from the *Planters Gazette*, reprinted in the *Tea Cyclopædia* issued from the office of the *Indian Tea Gazette*, Calcutta, and published by W. B. Whittingham & Co., 91, Gracechurch Street, London, in 1882. It is there stated that “the Commissioner of Customs at Hankow reports that the importance of the brick tea trade is rapidly increasing, and the demand becoming greater than the supply. The employment of steam machinery for pressing the bricks has proved in every way a great success, the steam-pressed brick being much better finished than that produced by hand, and more compact and firm, withstanding the difficulties of transit better, and ultimately arriving at its destination in Siberia little, if any, the worse for the journey. With the old method, the bricks, from insufficient pressing power, were liable to chip and crumble at the edges; and, as great stress is laid on the perfect appearance of the brick by the Siberians, it can be easily understood that a hard, sharply defined brick would at once obtain the preference. With both methods of manufacturing brick tea, there is a drawback, and a serious one—the damping of the dust by steam, which robs it of all its fragrance. To remedy this defect, a firm has imported a hydraulic press, which turns out small corrugated cakes, weighing a quarter of a pound each, retaining the original aroma in all its freshness.”

It was considered very probable that the ordinary brick tea and the compressed tea would run side by side in friendly competition, the brick keeping its own position for use amongst the poorer, and the compressed tea becoming popular amongst the better classes. At the time the article was written from which the preceding extract is made, there were six manufactories in Hankow, in three of which boilers were used either for steaming the tea, or both for that purpose and furnishing power for pressing. The dust from which brick tea is made comes principally from Ningchow in Kiangsi and Tsung yang and Yang-lout'ung in Hupeh, and varies both in fineness and cost according as it belongs to the first, second, or third crop.



The Commissioner proceeds to state that—

“The first operation is to sift the dust and reject all the sand and rubbish contained in it, usually amounting to about five per cent. It is then placed in a winnowing machine having three different sized sieves, with troughs corresponding, and passed into baskets. The residue, which is too coarse to pass any of the sieves, is taken out and trodden until it is reduced to the proper consistency, when it is placed in iron pans over a charcoal fire until it is sufficiently brittle, when it is again taken to be winnowed, and this operation is repeated until it has all been sifted to the requisite degree of fineness. Three sizes are produced, the coarser ones being employed to constitute the brick, while the finest dust is only used as a facing. The dust having been properly sifted the next step is to prepare it for pressing, and this is done by exposing it to the action of steam for three minutes, and it is this steaming that robs brick tea of its scent and flavour, and for which a remedy is eagerly sought.

“The old fashioned native apparatus consists of six iron boilers heated by charcoal and having spaces above, which are fitted with rattan covers. When the dust is to be steamed it is spread out on a sheet of cotton cloth placed over the boiler and covered up; but with the improved European apparatus the dust is simply put into iron boxes and the steam there passed through them. After having been sufficiently steamed to make it adhesive, the dust is put into a strong wooden mould, on the movable cover of which the trade mark of the ‘hong’ or firm is engraved (so as to leave the corresponding impression on the brick) and firmly wedged down. It is then pressed and placed on one side for two or three hours to cool. Each brick should weigh one catty ( $1\frac{1}{3}$  lb.), and all those that do not come up to the proper standard of weight or are defective in any way are rejected and re-made. For this purpose they are taken to a rotatory mill, constructed of two heavy circular stones moved by a horizontal wooden bar and working in a channel where the condemned bricks are thrown, and crushed as the wheels pass over them. Having again become dust, the operation already described is in all its details repeated. The hand press turns out 60 baskets a day with 25 per cent. failure bricks, while the steam press produces 80 baskets a day, with only five per cent. of bad work, and the saving by the employment of the improved machinery amounts to one tael a basket, or, according to the above stated out-turn, eighty taels a day, or about 20*l.* sterling. The bricks found to be correct in weight and free from defects are stored in the drying room for a week, when they are carefully wrapped separately in paper, and packed in bamboo baskets containing 64 bricks each. Green brick tea is made in the same manner, but of leaf, not dust, and the bricks are larger, weighing two pounds and a half each, thirty-six going to a basket when packed for export.”

There is a sample of hard compressed brick tea in the Kew Museum such as was imported in quantities into London from Shanghai in 1863, for re-exportation to Russia, the cost of which was 6*d.* per pound and duty. It seems from information kindly furnished by Mr. Henry Tuke Mennell, F.L.S., of St. Dunstan's Buildings, Great Tower Street, E.C., who presented the above-named specimen to the Museum, that this kind of tea is not now an article of commerce on the London market, though it is still an article of regular consumption in Russia, but is now chiefly, if not entirely, sent overland.

Consul Allen, reporting on the trade of Hankow for the year 1887, says, “The trade in Russian brick tea seems to increase ‘by leaps and bounds.’ The bricks are prepared entirely by steam machinery. “The brick tea factories, with their tall chimneys, are the most striking “buildings in the European settlement.”



The brick tea of Tibet is an entirely different quality of tea from the above described. The full grown leaves are used, and are comparatively loosely pressed together into blocks about 10 inches by 10 inches, and 4 inches thick.

Mr. Colbourne Baber, some time British Consul at Chungking, describes the Tibetan teapot as a wooden churn, in which the boiling infusion is poured through a strainer; a little salt is added, and some 20 strokes applied with a dasher pierced with five holes. A lump of butter is then thrown in, and the compound is again churned with from 100 to 150 strokes administered with much precision. The tea is then ready for drinking.

The use of compressed tea in this country has been attempted at different times, but never with complete success. A few years ago two companies were formed for working it, and at the present time there is a company in London which deals exclusively in this article, a sample of which is in the Kew Museums. It is claimed for this tea that it has many advantages over loose tea, the chief of which is that the leaves being submitted to heavy hydraulic pressure all the cells are broken, and the constituents of the leaf more easily extracted by the boiling water, thus effecting a considerable saving in the quantity required for use. Its great advantages over loose tea, however, would seem to be its more portable character, and in the case of long sea voyages, or for use in expeditions, the reduction of its bulk to one-third.

The compression of tea into blocks further, it is said, constitutes a real and important improvement in the treatment of tea. These blocks weigh a quarter of a pound each, and are subdivided into ounces, half ounces, and quarter ounces; this insures exactitude in measuring, and saves the trouble, waste, and uncertainty of measuring by spoonfuls. It also ensures uniformity in the strength of the infusion. By compression it is claimed that the aromatic properties of the leaf are retained for a much longer period, and that it is better preserved from damp and climatic changes.

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## CXLVIII.—TIMBER TREES OF STRAITS SETTLEMENTS.

A manuscript catalogue of Malayan names of timber trees drawn up by the well known Indian botanist, the late Dr. Maingay, has long been preserved at Kew. In part, at any rate, it seems to have been published as long ago as 1865. The following notice of it appeared in the *Singapore Free Press* for September 14 of that year:—

“Dr. Maingay, the Assistant Residency Surgeon of Malacca, has made a report on the timber and forest conservancy of that station, which appears in a supplement to the *Straits Government Gazette*, dated 1st September 1865. As an earnest of what is to follow it is acceptable, but in its present form it is useless either for scientific or commercial purposes; but when the author has botanically identified each timber, and obtained some information upon the size of the trees and the quantity procurable, his report will be most useful. Dr. Maingay appears to have identified only one tree, the *Pterocarpus indicus* or *Ang Sanah*, which Dr. Oxley did 20 years ago, as may be seen in the latter’s report upon the botany of Singapore. Collections of Straits’ woods have been frequently made and forwarded to public exhibitions.



Mr. Blundell, the late Governor of this Settlement, got a silver medal for one, but no one has taken the trouble before to make a list of them that we know of. The information afforded by Dr. Maingay, besides the vernacular names of the timbers, which he has arranged alphabetically, relates to their weight per cubic foot, colour, degree of hardness, and uses."

Dr. Maingay unhappily met with his death in 1869. He was then superintendent of the Rangoon Central Prison, and on November 15 he was shot during an outbreak of the prisoners. His botanical collections were acquired for Kew. They included a herbarium of the woody plants of the Eastern Indian peninsula, a large proportion of which were new to science. These were accompanied with a series of careful note books containing descriptions drawn up from fresh specimens, with the native names. The whole material has been worked up at Kew in the preparation by Sir Joseph Hooker of the Flora of British India, and has proved of inestimable value. As the woody plants of India as far as specimens were available have now been described in that work it has been possible to give botanical identifications to the native names comprised in Dr. Maingay's catalogue.

#### TIMBER TREES OF STRAITS SETTLEMENTS.

##### *Dilleniaceæ.*

1. SIMPOH (*Dillenia aurea*, Sm.). A large tree. Wood grey, beautifully mottled and wainscoted, hard, close grained. Not used. —Gamble, *Manual of Indian Timbers*, p. 3.

##### *Anonaceæ.*

2. MUM PESAND or PESANG (*Polyalthia Jenkinsii*, Benth. & Hk. f.). A tree. Wood yellowish white externally, becoming yellow internally. Grain coarse. It is soft and does not split in drying. Used for beams, supports for verandahs, &c.

Weight, 200 cubic inches = 4 lbs.  $13\frac{3}{4}$  ozs.

Cubic foot = 41 lbs.  $15\frac{3}{4}$  ozs.

##### *Bixineæ.*

3. ROKAM (*Flacourtia Rukam*, Zoll. & Moritz). A tree. Wood of a dull white colour, soft, grain coarse, does not split in drying. Used for furniture.

Weight, 211·8 cubic inches = 4 lbs. 10 ozs.

Cubic foot = 37 lbs. 11 ozs.

Hooker in *Flora of British India*, Vol. I. p. 192, says that this species is much cultivated for its fruit, which is the size of a large cherry.

##### *Polygaleæ.*

4. MATA PASSEH (*Trigoniastrum hypoleucum*, Miq.). A shrub or small tree. Wood of a very pale lemon colour, hard, grain fine, splits very much in drying. Used for making tables.

Weight,  $215\frac{1}{4}$  cubic inches = 5 lbs.  $11\frac{1}{2}$  ozs.

Cubic foot = 45 lbs.  $14\frac{1}{2}$  ozs.

5. KRABOO (*Xanthophyllum rufum*, A. W. Benn.). A large timber tree. Wood of a dirty white colour, with brownish striæ, grain medium, hard, does not split in drying. Uses unknown.

Weight, 242 cubic inches = 6 lbs. 3 ozs.

Cubic foot = 43 lbs. 3 ozs.



6. LIMAH BROH (*Xanthophyllum Griffithii*, Hook. f.). Evergreen tree. Wood yellowish white, grain coarse, soft, splits in drying. Uses unknown.

Weight, 171·5 cubic inches = 4 lbs. 6 $\frac{1}{4}$  ozs.

Cubic foot = 44 lbs. 3 $\frac{3}{4}$  ozs.

#### *Hypericineæ.*

7. SUMMAM PHAT (*Cratoxylon polyanthum*, Korth.). A glabrous shrub. Wood of a pale brown or reddish colour, grain fine, hard, does not split in drying. Uses unknown.

Weight, 218·9 cubic inches = 7 lbs. 7 $\frac{1}{4}$  ozs.

Cubic foot = 61 lbs. 15 ozs.

8. GRONGONG (*Cratoxylon arborescens*, Bl.). A bush? Wood dull red, grain coarse, soft, does not split in drying. Used for beams.

Weight, 191·88 cubic inches = 3 lbs. 8 $\frac{3}{4}$  ozs.

Cubic foot = 32 lbs. 15 ozs.

#### *Guttiferae.*

9. MANGGIS OUTAN (*Garcinia malaccense*, Hook. f.). Wood reddish white with darker lines and blotches, grain medium, fairly hard, splits in drying. Used for ordinary work.

Weight, 218·7 cubic inches = 5 lbs. 8 ozs.

Cubic foot = 43 lbs. 7 ozs.

Kurz says of this wood : "Wood brown, heavy; gives an inferior kind of gamboge."

10. KANDEYS (*Garcinia nigro-lineata*, Planch. MSS.). A tree. Wood pale dull red, grain fine, very hard, with a slight natural polish, splits very much in drying. Used for house supports.

Weight, 216·9 cubic inches = 8 lbs. 0 ozs.

Cubic foot = 63 lbs. 11 $\frac{3}{4}$  ozs.

11. MOONTANGOO or MUNTANGOO BOONGA, BINTANGOR (*Calophyllum canum*, Hook. f.). A tree. Wood brownish-white, streaked and variously marked with brown, grain very coarse, soft, does not split in drying. Used for masts of boats.

Weight, 223·9 cubic inches = 4 lbs.  $\frac{3}{4}$  oz.

Cubic foot = 31 lbs. 3 $\frac{3}{4}$  ozs.

12. PANAGA BOONGA (*Mesua ferrea*, L.). A middling-sized glabrous tree. Wood light red externally, becoming dark red towards the centre, grain medium, hard, splits slightly in drying. Used for mortars for rice pounders.

Weight, 213 $\frac{1}{2}$  cubic inches = 8 lbs. 14 ozs.

Cubic foot = 71 lbs. 13 ozs.

According to Gamble this wood is very durable and answers equally well with Pynkado (*Afzelia bijuga*, A. Gray) for sleepers, but the cost of cutting the hard wood, its weight, and the freight from the Tennaserim forests to Calcutta prevent its being much used, as the total cost is scarcely covered by the price (Rs. 5) per broad-gauge sleeper. It is used for building, for bridges, gunstocks, and tool handles. Its more general use, however, is prevented by its great hardness, weight, and the difficulty of working it. The seeds yield an oil.



*Ternstroemiaceae.*

13. PATOTOO (*Adinandra dumosa*, Jack). A small tree. Wood dark red, grain coarse, soft, does not split in drying. Uses unknown.

Weight, 176.1 cubic inches = 4 lbs.  $\frac{1}{2}$  oz.

Cubic foot = 39 lbs. 9 oz.

14. TATEYYOO, TAYTYOOF, or (query) TAYYOOF (*Eurya acuminata*, DC.?). A small tree. Wood pale red, grain fine, hard, splits slightly in drying. Used for beams in house building.

Weight, 225.75 cubic inches = 7 lbs.  $8\frac{1}{2}$  ozs.

Cubic foot = 57 lbs. 10 ozs.

15. SAMA JAWA (*Gordonia excelsa*, Bl.). Maingay appears to have collected two samples of the wood of this species from different localities, as the following descriptions appear under the native name of "Sama Jawa."

1. Wood very pale red, grain fine, hard, does not split in drying. Used for boat building and for beams.

Weight, 213.5 cubic inches = 7 lbs.  $4\frac{3}{4}$  ozs.

Cubic foot = 59 lbs.  $5\frac{3}{4}$  ozs.

2. Wood dull pale red, grain medium, hard, splits in drying. Used for making ladders (? steps).

Weight, 222.26 cubic inches = 8 lbs.  $6\frac{3}{4}$  ozs.

Cubic foot = 65 lbs.  $7\frac{1}{2}$  ozs.

16. RURIANG (*Archytea VahlII*, Choisy). A shrub or small tree. Wood very pale whitish-red, becoming darker towards the centre, grain fine, hard, splits slightly in drying. Uses unknown.

Weight, 184.4 cubic inches = 8 lbs. 12 ozs.

Cubic foot = 81 lbs. 15 ozs.

*Dipterocarpeae.*

17. SERIAH BHATOO or BAHTOO (*Shorea acuminata*, Dyer). Wood dull red or, in some of the external portions, reddish-white, streaked and stained with red, grain coarse, medium hard, does not split in drying. Uses unknown.

Weight, 215.1 cubic inches = 5 lbs. 9 ozs.

Cubic foot = 44 lbs. 10 ozs.

18. CHANGAL FEYRAK (*Shorea leprosula*, Miq.). Wood whitish-red, with slightly darker streaks, grain coarse, hard, splits very little in drying. Used for beams of boats.

Weight, 210 cubic inches = 6 lbs.  $11\frac{1}{4}$  ozs.

Cubic foot = 55 lbs.  $\frac{1}{4}$  oz.

19. MARANTIE KERRAP (*Shorea parvifolia*, Dyer). Wood dull red, grain coarse, soft, splits in drying. Used for planking.

Weight, 216.97 cubic inches = 4 lbs. 10 ozs.

Cubic foot = 36 lbs. 13 ozs.

20. MARANTIE CHINGAL (*Shorea bracteolata*, Dyer). Wood yellowish-white, with darker striae, grain medium, soft, does not split in drying. Used for planking.

Weight, 215  $\frac{1}{4}$  cubic inches = 5 lbs. 2 ozs.

Cubic foot = 41 lbs. 2 ozs.



21. KOOYING DOODOO (*Dipterocarpus turbinatus*, Gærtn.). A lofty evergreen tree. Wood pale lemon, grain coarse, medium hard, splits deeply in drying. Used for house-work.

Weight, 233 cubic inches =  $6\frac{1}{2}$  lbs.

Cubic foot = 48 lbs. 3 ozs.

In India this tree is known as the Gurjun-oil tree. The wood is used for house-building and for canoes in Burma; and the wood-oil is used in painting houses and ships. Gamble, *Manual of Indian Timbers*, p. 31.

22. KWANG BOOLOO (*Dipterocarpus crinitus*, Dyer). Wood dull pale red, grain medium, hard, does not split in drying. Used for house-building.

Weight, 232.9 cubic inches = 8 lbs. 6 ozs.

Cubic foot = 62 lbs. 2 ozs.

#### *Malvaceæ.*

23. MUN DURIAN (*Boschia Griffithii*, Mast.). A small tree. Wood pale brownish white with darker striæ and blotches, grain coarse, medium hard, splits slightly in drying. Used for general work.

Weight, 243.9 cubic inches = 7 lbs.  $1\frac{1}{2}$  ozs.

Cubic foot = 51 lbs. 15 ozs.

24. DOUN DURIAN (BUTTEENA). Same species as the last. Wood pale red with paler streaks, grain coarse, soft, splits slightly in drying. Used for boat-building, but only lasts seven or eight years.

Weight, 215 $\frac{1}{4}$  cubic inches = 4 lbs.  $4\frac{3}{4}$  ozs.

Cubic foot = 34 lbs. 8 ozs.

#### *Sterculiaceæ.*

25. PA-RU-PO (*Sterculia Maingayi*, Mast.). A lofty tree. Wood reddish white externally, becoming darker internally, grain coarse, soft, does not split in drying. Uses unknown.

Weight, 231.8 cubic inches = 5 lbs. 10 ozs.

Cubic foot = 41 lbs. 14 ozs.

26. TRALING (*Tarrietia simplicifolia*, Mast.). A tree. Wood very pale red, becoming darker towards the centre, grain medium, fairly hard, splits slightly in drying. Largely used for cart wheels.

Weight, 168.3 cubic inches = 5 lbs.  $1\frac{3}{4}$  ozs.

Cubic foot = 52 lbs.  $7\frac{1}{4}$  ozs.

27. CHIMP&KA MEARAH OUTAN (*Pterospermum diversifolium*, Bl.). A tree. Wood orange yellow, grain medium, fairly hard, splits slightly in drying. Used for making boxes.

Weight, 243.9 cubic inches = 7 lbs.  $2\frac{1}{4}$  ozs.

Cubic foot = 50 lbs.  $9\frac{1}{2}$  ozs.

NOTE.—Maingay says:—"As the label was lost of the above plant I am in doubt whether I am correct in calling it Champaka m. outan."

28. SUGEE JANTAN (*Buettneria uncinata*, Mast.). A shrubby plant. Wood dull red, paler in some parts than in others, grain coarse, hard, does not split in drying. Used for the sides of Gharrees.

Weight, 216.9 cubic inches = 7 lbs. 9 ozs.

Cubic foot = 60 lbs. 4 ozs.



*Tiliaceæ.*

29. KOODOO (*Chartacalyx accrescens*, Mast.). A tree. Wood faint reddish white, grain very coarse, very soft, does not split in drying. Uses unknown.

Weight, 229·36 cubic inches = 3 lbs.  $5\frac{3}{4}$  ozs.

Cubic foot = 25 lbs.  $4\frac{3}{4}$  ozs.

30. CHINDARYEH (*Grewia paniculata*, Roxb.). A tree? or shrub. Wood white, grain medium, very soft. Used for firewood.

Weight, 231·1 cubic inches = 4 lbs. 3 ozs.

Cubic foot = 31 lbs.  $4\frac{3}{4}$  ozs.

31. CHINDAREY (JANTAN). Wood dull olive, grain coarse, medium hard, splits deeply in drying. Used for the manufacture of yard measures.

Weight, 206·38 cubic inches = 6 lbs.  $10\frac{1}{2}$  ozs.

Cubic foot = 55 lbs.  $11\frac{1}{2}$  ozs.

NOTE.—Maingay describes this as a mere variety of the preceding.

32. MUDANG ASAM (*Elæocarpus stipularis*, Bl.) A tree. Wood reddish white, grain medium, soft, splits slightly in drying. Used for making boxes.

Weight, 217 cubic inches = 4 lbs. 6 ozs.

Cubic foot = 35 lbs. 5 ozs.

*Lineæ.*

33. MUNTAHWUN (*Roucheria Griffithiana*, Planch.). A climbing shrub. Wood white, grain coarse, very soft, does not split in drying. Uses unknown.

Weight, 222·26 cubic inches = 4 lbs. 4 ozs.

Cubic foot = 33 lbs.

34. JIN JA JONG or GIN JA GONG (*Ixonanthes reticulata*, Jack). Wood dirty white with brownish striæ, grain coarse, medium hard, splits in drying. Uses unknown.

Weight, 240 cubic inches = 5 lbs.  $14\frac{3}{4}$  ozs.

Cubic foot = 42 lbs.  $10\frac{1}{4}$  ozs.

35. JINJAGONG (JANTAN). Same species as the last. Wood brownish olive, grain medium, fairly hard, splits in drying. Uses unknown.

Weight, 238·5 cubic inches = 5 lbs.  $15\frac{1}{2}$  ozs.

Cubic foot = 48 lbs. 4 oz.

36. PAGOW ANK (*Ixonanthes icosandra*, Jack). A small tree. Wood faint reddish, grain fine, hard, splits deeply in drying. Uses unknown.

Weight, 227 $\frac{1}{2}$  cubic inches = 7 lbs.  $13\frac{1}{4}$  ozs.

Cubic foot = 59 lbs.  $7\frac{1}{4}$  ozs.

37. PAGOW ANAK (JANTAN). Same species as the last. Wood faint buff white, grain coarse, medium hard, splits slightly in drying. Uses unknown.

Weight, 222·2 cubic inches = 7 lbs. 2 ozs.

Cubic foot = 55 lbs. 6 ozs.

*Geraniaceæ.*

38. BILIMBING OUTAN (*Connaropsis monophylla*, Planch.). A small round-headed tree. Neither description nor uses of wood given.



*Rutaceæ.*

39. TINGEE BURONG (*Evodia Roxburghiana*, Benth.). A small tree. Wood reddish white, abundantly blotched with elongated patches of dull red or brown, grain coarse, soft, does not split in drying. Uses unknown.

Weight, 234·8 cubic inches = 3 lbs. 14 ozs.

Cubic foot = 28 lbs. 8 ozs.

*Simarubeæ.*

40. MIRLANG (*Iringia malayana*, Oliv. MS.). Glabrous tree. Wood pale yellowish buff, grain fine, hard, does not split in drying. Used for kris handles.

Weight, 218·69 cubic inches = 7 lbs. 6 $\frac{3}{4}$  ozs.

Cubic foot = 58 lbs. 10 $\frac{1}{4}$  ozs.

*Ochnaceæ.*

41. CHINTA MOLA (JANTAN) (*Gomphia sumatrana*, Jack). A small tree. Wood dull red, grain medium, hard, splits slightly in drying. Used for the manufacture of boats, pumps, and blocks.

Weight, 209·92 cubic inches = 6 lbs. 8 $\frac{3}{4}$  ozs.

Cubic foot = 53 lbs. 14 $\frac{1}{4}$  ozs.

42. RUTHEE CHINTA MOLA, CHURTA or CHIERTA MOLA. Same as the last. Wood yellowish-white, grain medium, moderately soft, brittle, splits in drying.

Weight, 247·7 cubic inches = 7 lbs. 13 ozs.

Cubic foot = 54 lbs. 8 oz.

*Burseraceæ.*

43. SUNGAL or SANGAL OUTAN (*Canarium rufum*, A. W. Benn.). A tree of medium size. Neither description nor uses of wood given.

44. KASAMBEE or KASUMBA (*Canarium secundum*, A. W. Benn.). Wood dull red, grain medium, hard, splits slightly in drying. Used for blocks for boat-rigging, &c.

Weight, 230·8 cubic inches = 6 lbs. 13 $\frac{1}{4}$  ozs.

Cubic foot = 51 lbs. 1 $\frac{3}{4}$  ozs.

45. KADONDONG OUTAN (*Canarium Kadondon*, A. W. Benn.). Wood dull white, becoming reddish, white internally, grain very coarse, soft, splits slightly in drying.

Weight, 249 $\frac{1}{2}$  cubic inches = 4 lbs. 7 $\frac{1}{2}$  ozs.

Cubic foot = 30 lbs. 15 ozs.

46. AN REYJAN (*Canarium laxum*, A. W. Benn.). Wood yellowish-white, grain coarse, soft, brittle, splits in drying. Used in the Arts, &c.

Weight, 225 $\frac{3}{4}$  cubic inches = 6 lbs. 7 $\frac{3}{4}$  ozs.

Cubic foot = 49 lbs. 10 ozs.

47. KRANTIE (*Santiria apiculata*, A. W. Benn.). A tree. Wood dirty white, grain medium, fairly hard, does not split in drying. Used for gun-stocks.

Weight 169·75 cubic inches = 4 lbs. 2 $\frac{1}{2}$  ozs.

Cubic foot = 42 lbs. 4 $\frac{1}{2}$  ozs.



48. KEJAI (*Trigonochlamys Griffithii*, Hook. f.). A tree. Wood yellowish-white, grain medium, fairly hard, does not split in drying. Uses unknown. This tree affords an expensive dammar, which gives off an odour when burned.

Weight, 227·3 cubic inches = 6 lbs. 9½ ozs.

Cubic foot = 52 lbs. 2 ozs.

#### *Meliaceæ.*

49. SUNTOOL OUTAN (*Sandoricum indicum*, Cav.). A lofty tree. Colour olive white, grain medium, very soft, does not split in drying. Uses in Malaya unknown.

Weight, 171½ cubic inches = 3 lbs. ¼ oz.

Cubic foot = 30 lbs. 6 ozs.

NOTE.—The wood of this species is known as Thitto in Burma, and is there used for carts and boat building.—Gamble.

#### *Olcineæ.*

50. PREECHA (*Ctenolophon parvifolius*, Oliv.). A tree. Wood yellowish-white, becoming red towards the centre, grain fine, fairly hard, does not split in drying. Affords a gum.

Weight, 80 cubic inches = 2 lbs. 8 ozs.

Cubic foot = 54 lbs.

51. AETAN PANDAK. Same as the last. Wood dirty-white, with faint brownish minute striæ, grain fine, soft, splits slightly in drying.

Weight, 220·5 cubic inches = 4 lbs. 5 ozs.

Cubic foot = 33 lbs. 12¾ ozs.

#### *Ilicineæ.*

52. MUNSEERA (*Ilex cymosa*, Bl.). A small tree. Wood dirty white, grain medium, soft, splits slightly in drying. Uses unknown.

Weight, 175¾ cubic inches = 4 lbs. ¼ oz.

Cubic foot = 39 lbs. 7½ ozs.

53. PASAK LENGA (*Ilex macrophylla*, Wall.?). A tree about 15 feet high. Wood dull dark red, grain fine, very hard, does not split in drying. Used for boat trenails.

Weight, 216·9 cubic inches = 7 lbs. 13 ozs.

Cubic foot = 62 lbs. 2 ozs.

#### *Sapindaceæ.*

54. KLUT LYOO (*Erioglossum edule*, Bl.). A large timber tree or shrub. Wood reddish-white, grain fine, hard, does not split in drying, and is apparently of good quality. Uses unknown.

Weight, 229 cubic inches = 7 lbs. 2½ ozs.

Cubic foot = 54 lbs.

55. SUGEE (*Cupania* [*Guioa pubescens*, Radlk.]). Wood faint whitish-red, grain coarse, very soft, splits slightly in drying. Uses unknown.

Weight, 238·4 cubic inches = 3 lbs. 8 ozs.

Cubic foot = 25 lbs. 5 ozs.

56. RAMBUTAN PASSEH (*Nephelium costatum*, Hiern.). Wood dull white, mixed with reddish-white, grain fine, medium hard, of good and useful quality. Used for beams.

Weight, 236·7 cubic inches = 8 lbs. 9 ozs.

Cubic foot = 62 lbs. 8 ozs.



57. MATA KUCHING (*Nephelium malaiense*, Griff.). Wood yellowish or brownish white, grain medium, fairly hard, does not split in drying. Much prized for tables and other furniture.

Weight, 216·97 cubic inches = 7 lbs. 15¼ ozs.

Cubic foot = 63 lbs. 5¾ ozs.

58. RAMBUTAN PACHUT (*Nephelium lappaceum*, Linn.). Cultivated specimen. A lofty tree. Wood pale whitish-brown externally, becoming darker internally, streaked with darker striæ, streaks and blotches, grain coarse, medium hard, does not split in drying. Uses not stated.

Weight, 158 cubic inches = 5 lbs. 15½ ozs.

Cubic foot = 65 lbs. 4 ozs.

59. RAMBUTAN JANTAN. A cultivated form of the last-named species. Wood reddish, becoming darker towards the centre, grain fine, hard, splits slightly in drying. Used for beams.

Weight, 250 cubic inches = 9 lbs.

Cubic foot = 62 lbs. 3 ozs.

#### *Anacardiaceæ.*

60. ROOMINYAH (*Bouea macrophylla*, Griff.). A tree. Wood yellowish white, becoming brown towards the centre, grain medium, fairly hard, does not split in drying. Used for kris scabbards.

Weight, 231·1 cubic inches = 7 lbs. 12¾ ozs.

Cubic foot = 58 lbs. 4¾ ozs.

NOTE.—In the *Flora of British India*, Hooker, Vol. II., p. 21, this tree is described as the “Roomaniya Baitool” of the Malays.

61. KATAWA OUDONG (*Buchanania acuminata*, Turcz.). A small tree. Wood pale brownish white, grain coarse, soft, splits deeply in drying. Uses unknown.

Weight, 158·4 cubic inches = 3 lbs. 5 ozs.

Cubic foot = 36 lbs. 2 ozs.

62. BALOW (BUTTEENA) (*Swintonia Schwenkii*, Teysm.). A tall tree. Wood dull whitish, with light brown striæ, grain medium, fairly hard, does not split in drying. No uses mentioned.

Weight, 225¾ cubic inches = 6 lbs. 4½ ozs.

Cubic foot = 47 lbs. 15¼ ozs.

The following note, referring to this wood, appears in Gamble's *Manual of Indian Timbers*, p. 104: “The wood is sometimes used for “boats, and is said by Major Lewin to last better than other woods in “salt water.”

63. RAPAT BOOKIE (*Melanochyla angustifolia*, Hook. f.). A tree. Wood pale lemon, grain medium, hard, splits in drying. Used in house building.

Weight, 216·9 cubic inches = 7 lbs. 11¼ ozs.

Cubic foot = 62 lbs. 5¾ ozs.

64. CHUNGAL BATU BUKIT (*Melanochyla Maingayi*, Hook. f.). A tree yielding a copious black varnish. Wood pale yellowish-white with a small brown centre, grain fine, medium hard, splits in drying. Used for supports for Malay house roofs.

Weight, 251·46 cubic inches = 6 lbs. 14½ ozs.

Cubic foot = 47 lbs. 7 ozs.



*Connaraceæ.*

65. BABATAY BOOKIT (*Rourea pulchella*, Planch.). Wood pale olive brown, grain medium, fairly hard, splits in drying.

Weight, 219·45 cubic inches = 6 lbs. 15 $\frac{3}{4}$  ozs.

Cubic foot = 54 lbs. 15 $\frac{3}{4}$  ozs.

Maingay says: "This species affords no timber whatever."

66. KAYU KLUT SAMA. Same species as the last. Wood red, grain fine, hard, splits slightly in drying. Used for pestles in grinding paddy.

Weight, 227·5 cubic inches = 8 lbs. 3 ozs.

Cubic foot = 62 lbs. 3 ozs.

Maingay says: "This genus affords no timber such as described above."

NOTE.—The numbers referring to these two entries for *Rourea* correspond to Maingay's specimens of *R. pulchella* in the Kew Herbarium.

*Leguminosæ.*

67. RASSAK (*Millettia atropurpurea*, Benth.). An erect tree. Wood very pale lemon, grain fine, hard, splits slightly in drying. Valuable for beams.

Weight, 221·1 cubic inches = 6 lbs. 9 $\frac{1}{4}$  ozs.

Cubic foot = 51 lbs. 2 $\frac{3}{4}$  ozs.

68. PRANGEE (*Millettia cœrulea*, Baker?). A woody climber. Wood watery brown, grain medium, fairly hard, splits in drying. Used for gun stocks, which are said by the Malays to last 20 years, and also for house beams.

Weight, 220·5 cubic inches = 6 lbs. 3 ozs.

Cubic foot = 48 lbs. 7 ozs.

69. ANG SANAH (*Pterocarpus indicus*, Willd.). A tall tree. Wood yellowish in good specimens grown on hilly ground, or in old trees elegantly veined and marked with darker streaks, grain medium, fairly hard. Very valuable for furniture; variable in weight.

Weight, cubic foot = 50 lbs. 9 ozs. to 60 lbs. 3 ozs.

NOTE.—*P. indicus* furnishes the "Andaman Redwood" and also the "Padouk" of Burma. Gamble says of this wood: "It seasons well, works well, and takes a very fine polish."

70. KAYU KADAH (*Derris amana*, Benth.). A climber. Wood faint reddish white, grain fine, hard, splits in drying. Used for bedsteads and furniture, but probably inferior from its tendency to crack.

Weight, 227 $\frac{1}{2}$  cubic inches = 7 lbs. 6 ozs.

Cubic foot = 56 lbs.

In a supplemental note on this specimen Maingay says: "I do not think this species affords any timber whatever, but is an elongated flexuose shrub."

71. KRANJEE SKALAT (*Dialium platysepalum*, Baker). A tree. Wood externally white, heartwood reddish, grain coarse, hard, splits in drying, and is probably brittle. Used for boat masts and in boat building.

Weight, 225·8 cubic inches = 7 lbs. 9 $\frac{3}{4}$  ozs.

Cubic foot = 58 lbs. 3 $\frac{3}{4}$  ozs.

NOTE.—According to Maingay the term Kranjee is applied indiscriminately to the genus *Dialium*, which contains several Malacca species.



72. KOOMPASS (*Kompassia malaccensis*, Maingay). Wood yellowish-white, occasionally marked with dark streaks, grain coarse, medium hard, splits in drying. Used for shipbuilding.

Weight, 222·2 cubic inches = 6 lbs. 15 ozs.

Cubic foot = 53 lbs. 15 ozs.

73. MIRBOW (*Afzelia palembanica*, Baker).—A tall unarmed erect tree. Wood pale red with dark red streaks, grain coarse, hard, does not split in drying. Commonly called Malacca teak. Affords beams of excellent quality.

Weight, 224 cubic inches = 6 lbs.  $7\frac{3}{4}$  ozs.

Cubic foot = 50 lbs.  $\frac{1}{4}$  oz.

NOTE.—A specimen of this plant, collected by Griffith and contained in the Kew Herbarium, bears the following note: "The best Malacca timber tree, Mirbow of the Malays."

74. SAPUTTAY (*Afzelia? coriacea*, Baker). A tree. Wood brownish-white with darker striæ, grain coarse, medium hard, does not split in drying. Uses unknown.

Weight, 251·1 cubic inches = 5 lbs.  $14\frac{3}{4}$  ozs.

Cubic foot = 40 lbs. 12 ozs.

75. SIPFATAY (JANTAN) (*Sindora velutina*, Baker). A tree. Wood pale lemon, grain coarse, hard, splits deeply in drying. Used for beams for houses.

Weight, 215 $\frac{1}{4}$  cubic inches = 6 lbs.  $4\frac{3}{4}$  ozs.

Cubic foot = 50 lbs.  $8\frac{3}{4}$  ozs.

76. SAGA (*Adenanthera bicolor*, Moon). A tree. Wood dirty white, becoming brownish towards the centre, grain medium, hard, does not split in drying. Uses unknown.

Weight, 245·9 cubic inches = 8 lbs. 1 oz.

Cubic foot = 56 lbs. 10 oz.

77. JARENG (*Pithecolobium lobatum*, Benth.). A tall tree. Wood yellowish-white, grain very coarse, soft, splits in drying. Used for firewood.

Weight, 215·75 cubic inches = 5 lbs.  $9\frac{1}{4}$  ozs.

Cubic foot = 44 lbs.  $10\frac{3}{4}$  ozs.

#### *Rosaceæ.*

78. PANAHGAH PYA (*Parinarium Griffithianum*, Benth.). A tree. Wood red with light markings, grain medium, fairly hard, splits very slightly in drying. Uses unknown.

Weight, 201·7 cubic inches = 5 lbs.  $12\frac{1}{2}$  ozs.

Cubic foot = 49 lbs. 8 ozs.

79. KLET BHATOO (*Parinarium nitidum*, Hook. f.). A small tree. Wood faint reddish, grain medium, hard, splits very slightly in drying. Used for beams.

Weight, 164·16 cubic inches = 6 lbs.  $9\frac{1}{2}$  ozs.

Cubic foot = 69 lbs.  $6\frac{1}{2}$  ozs.

80. FAFOO LOOT (*Pygeum Maingayi*, Hook. f.). Wood pale olive or olive white with brownish striæ and gamboge coloured stains, grain coarse, medium hard, splits in drying. Used for beams.

Weight, 216·9 cubic inches = 5 lbs.  $15\frac{1}{4}$  ozs.

Cubic foot = 47 lbs.  $6\frac{3}{4}$  ozs.

NOTE.—Maingay says of the native name of this plant: "This, I think, ought to be probably spelled Fafoo laut instead of loot."



*Rhizophoræ.*

81. MATAKALEY (*Gynotroches axillaris*, Miq.). A small tree. Wood pale brownish white, with darker stains and lines, grain coarse, medium hard, does not split in drying. Used for blades of oars.

Weight,  $220\frac{1}{2}$  cubic inches = 5 lbs.  $5\frac{1}{4}$  ozs.

Cubic foot = 41 lbs.  $11\frac{1}{2}$  ozs.

*Myrtaceæ.*

82. GALAM (*Melaleuca Leucadendron*, Linn. var. *minor*). An ever-green tree. Wood dull reddish or brownish, mottled or veined, grain coarse, medium hard, splits slightly in drying. Used for piles. Bark used largely in caulking. This tree forms the first growth in marshy places after the forest has been cleared.

Weight,  $234\cdot8$  cubic inches = 6 lbs.  $5\frac{3}{4}$  ozs.

Cubic foot = 46 lbs.  $12\frac{3}{4}$  ozs.

NOTE.—Cajuput oil is obtained from the leaves of this tree, and is largely exported from the Malay Archipelago; it is used as a stimulant and rubefacient.

83. MOOMPOYAN (*Rhodamnia trinervia*, Bl., var. *spectabilis*). A small tree or shrub. Wood olive white with brownish striæ, grain fine, medium hard, splits deeply in drying. Used for common work.

Weight,  $220\cdot5$  cubic inches = 5 lbs. 11 ozs.

Cubic foot = 44 lbs. 9 ozs.

84. MIMPOYAN (BUTTEENA). Same as the last. Wood dull brownish red, grain fine, very hard, does not split in drying. Used for fences round buildings.

Weight,  $220\frac{1}{2}$  cubic inches = 8 lbs. 2 ozs.

Cubic foot = 63 lbs. 10 ozs.

85. GALAM PADANG JANTAN (*Decaspermum paniculatum*, Kurz.). Colour dull dirty white, grain fine, hard, splits deeply in drying and warps. Used for general work.

Weight,  $211\cdot8$  cubic inches = 6 lbs.  $1\frac{3}{4}$  ozs.

Cubic foot = 49 lbs.  $13\frac{1}{2}$  ozs.

86. GALAM PADANG. Same as the last. Wood reddish white or very pale dull red, grain fine, hard, splits deeply in drying. Uses not stated.

Weight,  $218\cdot24$  cubic inches = 6 lbs.  $11\frac{1}{4}$  ozs.

Cubic foot = 53 lbs. 1 oz.

87. GULAM TI KOOS (*Eugenia grandis*, Wight, var.). A large tree. Wood dirty dull red, grain coarse, medium hard, does not split in drying. Used for beams.

Weight,  $227\cdot1$  cubic inches = 5 lbs. 11 ozs.

Cubic foot = 43 lbs. 4 ozs.

88. KAYU KLUT NASSEE (*Eugenia rubens*, Roxb.). A large tree. Wood dull red, darker towards the centre, grain medium or fine, hard, splits in drying. Used as beams in large houses. Apparently a very valuable timber.

Weight, 217 cubic inches = 7 lbs. 11 ozs.

Cubic foot = 61 lbs.  $3\frac{1}{2}$  ozs.

89. SAMAK AYAM. Same as the last. Wood pale watery brown, occasionally mottled with oblong paler blotches, grain medium, hard, splits widely in drying. Used for beams.

Weight,  $182\cdot7$  cubic inches = 6 lbs.  $9\frac{1}{4}$  ozs.

Cubic foot = 61 lbs.  $5\frac{3}{4}$  ozs.



90. BABATAY PAYA (*Eugenia zeylanica*, Wight.). A large shrub or moderate-sized tree. Wood very pale red, with paler rings, grain fine, medium hard, does not split in drying. Used in shipbuilding.

Weight,  $199\frac{1}{2}$  cubic inches = 7 lbs.

Cubic foot = 60 lbs.  $9\frac{2}{3}$  ozs.

91. KAYU KLUT BOEY (*Eugenia lineata*, Bl.). A shrub or small tree. Wood very pale brownish white, grain fine, medium hard, splits in drying. Used for hammers for crushing paddy.

Weight, 224 cubic inches = 6 lbs.  $6\frac{1}{4}$  ozs.

Cubic foot = 49 lbs.  $4\frac{3}{4}$  ozs.

92. KAYU KLUT BOOKAY. Same as the last. Wood dirty white, with occasional brown lines, grain fine, hard, splits in drying.

Weight, 162·26 cubic inches = 5 lbs.  $4\frac{3}{4}$  ozs.

Cubic foot = 56 lbs.  $6\frac{1}{2}$  ozs.

NOTE.—Regarding the above native name, Maingay says: "Perhaps the spelling ought to have been Bookit instead of Bookay."

93. KAYU KLUT MEARAH. Same as the last. Wood dull red, grain fine, very hard, splits slightly in drying. A very valuable wood, used in house building.

Weight, 216·9 cubic inches = 8 lbs.  $2\frac{1}{4}$  ozs.

Cubic foot = 64 lbs.  $13\frac{1}{2}$  ozs.

94. KY KLUT PYA (*Eugenia venulosa*, Wall.). Wood dull dirty red, grain medium, hard, splits in drying. Uses unknown.

Weight, 166·9 cubic inches = 5 lbs.  $14\frac{1}{2}$  ozs.

Cubic foot = 61 lbs. 2 ozs.

95. KAYU KLUT JAMBU AYER (*Eugenia microcalyx*, Duthie). Wood dull red, grain medium, hard, splits in drying. Used as supports for houses.

Weight, 230·8 cubic inches = 6 lbs.  $11\frac{1}{2}$  ozs.

Cubic foot = 50 lbs.  $4\frac{1}{2}$  ozs.

NOTE.—Kyu Klut Pya is another name for this species.

96. KAYU PALOONG (*Eugenia nitida*, Duthie). Wood faint yellowish white, grain medium, fairly hard, splits considerably in drying. Uses unknown.

Weight, 233 cubic inches = 5 lbs.  $9\frac{1}{4}$  ozs.

Cubic foot = 41 lbs.  $5\frac{3}{4}$  ozs.

#### *Melastomaceæ.*

97. SEERALL MUNAHWUN (*Kibessia simplex*, Korth.). A large shrub. Wood brownish white, grain medium, fairly hard, scarcely splits in drying. Used for beams?

Weight,  $225\frac{3}{4}$  cubic inches = 5 lbs.  $7\frac{1}{4}$  ozs.

Cubic foot = 41 lbs.  $11\frac{3}{4}$  ozs.

98. NEPEES KOLELE, NEPEES KOLETE or NEPEES KULIT (*Memecylon amabile*, Bedd. var. *malaccensis*). Wood reddish white, grain fine, hard, cracks slightly in drying. Used for buggy shafts and pestles for pounding rice.

Weight, 240·2 cubic inches = 8 lbs. 13 ozs.

Cubic foot = 63 lbs. 6 oz.

99. MANG-AS. Same as the last. Wood dull red with a natural gloss, grain fine, very hard, does not split in drying. A remarkably heavy and valuable wood. Used for general purposes.

Weight, 224 cubic inches = 9 lbs.  $11\frac{1}{2}$  ozs.

Cubic foot = 74 lbs.  $15\frac{1}{2}$  ozs.



*Araliaceæ.*

100. ALOOS SURAT (*Aralidium pinnatifidum*, Miq.). Wood faint dull red, grain fine, hard, splits deeply in drying. Used for the upright supports of bridges and heavy work of a similar description.

Weight, 240·00 cubic inches = 7 lbs. 9½ ozs.

Cubic foot = 54 lbs. 10½ ozs.

*Cornaceæ.*

101. KANANGA OUTAN (*Marlea ebenacea*, Clarke). Wood pale yellowish white, grain fine, medium hard, splits slightly in drying. Used for general work.

Weight, 225¾ cubic inches = 5 lbs. 13¼ ozs.

Cubic foot = 44 lbs. 9¾ ozs.

The following Note by Maingay refers to the above:—"The flower buds of this species rather closely resemble those of some *Anonacea*, hence the Malay name which, however, may also be applied to widely different trees."

*Rubiaceæ.*

102. BROMBONG (*Sarcocephalus Junghuhnii*, Miq.). Wood bright gamboge yellow, grain fine, hard, does not split in drying. A very remarkable and valuable timber.

Weight, 220·4 cubic inches = 7 lbs. 2½ ozs.

Cubic foot = 56 lbs. 1½ ozs.

NOTE.—Maingay says: "The trees are almost invariably hollow in the centre, but are not touched by white ants. Most valuable for railway sleepers, and in considerable abundance in the Peninsula. Its colour is in all probability due to gamboge."

103. KAYU GADING (*Urophyllum glabrum*, Wall.). Wood very pale whitish red or reddish white, grain medium, very hard, splits very slightly in drying. Used for the manufacture of kris handles, and probably valuable for carving or wood engraving.

Weight, 227·5 cubic inches = 8 lbs. 10 ozs.

Cubic foot = 65 lbs. 8 oz.

104. KACHA FEYRAYNG OUTAN (*Gardenia tubifera*, Wall.). Sub-arboreous, young parts resinous. Wood white, grain fine, medium hard, splits in drying. "The buttresses of this immense tree used for cart-wheels."

Weight, 234·5 cubic inches = 7 lbs.

Cubic foot = 51 lbs. 9 ozs.

105. MUDANG KASAP (*Randia anisophylla*, Jack). A small tree. Wood pale white, grain medium, soft, does not split in drying. Used for house beams.

Weight, 231·1 cubic inches = 5 lbs. 4½ ozs.

Cubic foot = 39 lbs. 7½ ozs.

106. TANTOOLNG (*Timonius Jambosella*, Thw.). A small evergreen tree. Wood dull white, grain medium, soft, splits in drying. Uses unknown.

Weight, 213 cubic inches = 5 lbs. 10½ ozs.

Cubic foot = 45 lbs. 14 ozs.

NOTE.—"No reliance evidently to be placed on the local name above quoted."—Maingay.



107. TINTOOLAN JANTAN (*Timonius Rumphii*, DC.). This species is similar to the last mentioned. Wood whitish yellow, grain medium, fairly hard, splits slightly in drying. Uses unknown.

Weight, 227·3 cubic inches = 6 lbs. 9½ ozs.

Cubic foot = 50 lbs. 2 ozs.

108. CHAENG WAY (BUTTEENA) (*Canthium didymum*, Roxb.). A stout evergreen shrub. Wood dull white, grain fine, hard, does not split in drying. Used for boat building.

Weight, 218·7 cubic inches = 6 lbs. 15 ozs.

Cubic foot = 54 lbs. 12 ozs.

109. MUNKOODOO OUTAN (*Morinda tinctoria*, Roxb.?). Wood dull olive, grain coarse, soft, splits extensively in drying. Uses unknown.

Weight, 200 cubic inches = 5 lbs. 6 ozs.

Cubic foot = 46 lbs. 7 ozs.

NOTE.—The roots are used in India as a dye.

110. CHAENGWOY (JANTAN) (*Mesoptera Maingayi*, Hook. f.). A tree. Wood dull or reddish white, grain fine, hard, splits very slightly in drying. Uses unknown.

Weight, 213 cubic inches = 8 lbs.

Cubic foot = 64 lbs. 14 ozs.

#### *Myrsinæ.*

111. ANG UNGUMBET (*Myrsine ramentacea*, A. DC., var. *ovata*). An erect tree, 30 feet high. Wood faint reddish, grain medium, hard, splits deeply in drying. Used in shipbuilding for trenails.

Weight, 217 cubic inches = 6 lbs. 13 ozs.

Cubic foot = 54 lbs. 4 ozs.

#### *Sapotaceæ.*

112. KAYU MALOOKOOT (*Chrysophyllum Roxburghii*, G. Don.). Tree 40 to 60 feet high. Wood dull white, grain medium, soft, does not split in drying. Used for kris scabbards.

Weight, 225¾ cubic inches = 5 lbs. 10½ ozs.

Cubic foot = 43 lbs. 4½ ozs.

113. TUA-TUA (*Sideroxylon malaccense*, Clarke). A tree. Wood yellowish white, grain medium, soft, splits slightly in drying. Uses unknown.

Weight, 245·8 cubic inches = 6 lbs. 6 ozs.

Cubic foot = 44 lbs. 13 ozs.

114. BILIAN WHANGEE (*Dichopsis obovata*, Clarke). A tree. Wood very dull reddish, grain medium, very hard, splits slightly in drying. Affords beams of excellent quality. The beams remain undecayed for a long period under water, and are not readily eaten by white ants.

Weight, 225·8 cubic inches = 8 lbs. 6 ozs.

Cubic foot = 64 lbs. 2¾ ozs.

115. NGYATO (*Payena lucida*, A. DC. var. *Wightii*). An evergreen tree. Wood dull brownish red, grain very coarse, very soft, does not split in drying. Used for planks.

Weight, 168·38 cubic inches = 2 lbs. 14½ ozs.

Cubic foot = 29 lbs. 13 ozs.

116. TANJONG (*Mimusops Elengi*, L.). A large evergreen tree. Wood dull reddish, becoming darker towards the centre, grain medium, fairly hard, does not split in drying. Uses not stated.

Weight, 231·1 cubic inches = 5 lbs. 10 ozs.

Cubic foot = 42 lbs. 0 $\frac{3}{4}$  ozs.

NOTE.—The wood of this species is used in India for house building, carts, and cabinet work. Gamble.

#### *Ebenaceæ.*

117. TARING PLANDO (*Diospyros hirsuta*, Lin. f. var. *lucida*, Wall.). Wood faint reddish white, grain coarse, soft, splits in drying. Uses unknown.

Weight, 218·7 cubic inches = 3 lbs. 14 $\frac{1}{2}$  ozs.

Cubic foot = 30 lbs. 13 $\frac{1}{2}$  ozs.

118. KAYU ARANG (*Diospyros clavigera*, Clarke). Wood pale brown, heartwood black, grain very fine, extremely hard. One of the Ebonies of commerce.

Weight, cubic foot = 80 lbs. 15 ozs.

#### *Styraceæ.*

119. KOOMINYAN (*Styrax Benzoin*, Dryand.). A small tree. Wood dull red and white irregularly mixed, grain very coarse, soft, does not split in drying. Affords a valuable gum.

Weight, 229·3 cubic inches = 3 lbs. 12 ozs.

Cubic foot = 28 lbs. 4 ozs.

NOTE.—The number of the Herbarium specimen referring to the above is 1642 in Maingay's manuscript; this seems, however, to be a mistake, and should be 2642, which is the number attached to Maingay's specimen of *S. Benzoin* in Herb. Kew. This species affords the Gum Benzoin of commerce.

#### *Apocynaceæ.*

120. PULEI PEEPAY, PULEI PEPAYTI, or POLAI (*Vallaris Maingayi*, Hook. f.). A large tree. Wood yellowish white, grain coarse, soft, does not split in drying.

NOTE.—E. Balfour in his book on "Timber Trees," 3rd edition, 1870, p. 211, under the name of Polai, says:—"A tree of Singapore. The wood is used to make floats for fishing nets. It is a very remarkably light, white wood, and might probably be imported and used with advantage as a substitute for cork and some similar substances. (Note. —Is this the Plye of Borneo? Is it the *Sonneratia acida*?)"

#### *Verbenaceæ.*

121. KAPEYANG (*Callicarpa arborea*, Roxb.). A tree, often 40 feet high, with a thick trunk and round head. Wood reddish white streaked and blotched with reddish brown, becoming darker or of a dull red towards the centre, grain medium, fairly hard, does not split in drying. Uses not stated.

Weight, 266 cubic inches = 7 lbs. 2 $\frac{1}{4}$  ozs.

Cubic foot = 46 lbs. 6 ozs.

NOTE.—In India this wood is used only for charcoal. Gamble.



122. BUA BOOASS (*Premna divaricata*, Wall.). A climber. Wood yellowish white, grain medium or coarse, fairly hard, splits in drying. Used for general work. The natives eat the leaves.

Weight, 163·8 cubic inches = 4 lbs. 11 ozs.

Cubic foot = 49 lbs.  $7\frac{1}{4}$  ozs.

123. LEBAN BUNGA (*Vitex pubescens*, Vahl). A tree 30 to 50 feet high. Wood yellowish white, grain medium, hard, does not split in drying. Used for boat building.

Weight, 195·8 cubic inches = 5 lbs. 13 ozs.

Cubic foot = 51 lbs. 4 ozs.

124. LEBAN TANDO. Same as the last. Wood very pale olive brown, grain fine, hard, does not split in drying.

Weight, 180·68 cubic inches = 5 lbs. 11 ozs.

Cubic foot = 54 lbs. 6 ozs.

### *Myristiceæ.*

125. TAKUL BANON (*Myristica Farquhariana*, Wall.). A tall tree. No particulars given concerning the wood.

### *Euphorbiaceæ.*

126. MUDANG KUNEĀT (*Glochidion superbum*, Baill.). A tree 30 to 40 feet high. Wood olive yellow becoming reddish towards the centre, grain coarse, fairly hard, does not split in drying. Used for common work.

Weight, 280 cubic inches = 6 lbs.

Cubic foot = 37 lbs.

127. TAMANGOW OR TAMANGOW JANTAN. Same as the last. Wood pale reddish, grain medium, fairly hard, splits in drying, and is probably rather brittle. Uses not stated.

Weight, 217 cubic inches = 7 lbs.

Cubic foot = 55 lbs. 11 ozs.

128. BRA BRAS (*Aporosa microcalyx*, Hassk.). A small tree. Wood yellowish white, grain coarse, medium, hard, does not split in drying. Used for posts for houses, but is not durable.

Weight, 166 cubic inches = 4 lbs.  $2\frac{1}{2}$  ozs.

Cubic foot = 43 lbs.  $3\frac{9}{10}$  ozs.

129. GYAM OR more properly NGYAM (*Aporosa Maingayi*, Hook. f.). Wood brownish becoming red towards the centre, grain medium, hard, does not split in drying. A most valuable timber and is not attacked by white ants.

Weight, 115·6 cubic inches = 4 lbs. 9 ozs.

Cubic foot = 68 lbs. 3 ozs.

130. JIN JINTA (JINTANG) (*Aprosa nervosa*, Hook. f.). Wood dull white, grain coarse, soft, does not split in drying. Uses not stated.

Weight, 224 cubic inches = 5 lbs.  $9\frac{3}{4}$  ozs.

Cubic foot = 43 lbs.  $4\frac{1}{4}$  ozs.

131. JIN JARONG JANTAN (*Daphniphyllum laurinum*, Baill.). A shrub. Wood dull white, grain fine, fairly hard, splits slightly in drying. Uses not stated.

Weight, 234·7 cubic inches = 8 lbs.  $6\frac{1}{2}$  ozs.

Cubic foot = 61 lbs. 14 ozs.

132. TAMPOA (*Baccaurea reticulata*, Hook. f.). A tree. Wood dull red, grain medium, fairly hard, does not split in drying. Uses not stated.

Weight, 167 cubic inches = 5 lbs. 1 oz.

Cubic foot = 52 lbs. 6 ozs.

133. KASUMBA (*Antidesma Ghaesembilla*, Gærtn.). A small tree. Wood white, grain very coarse, soft, splits in drying. Used for light rafters for native huts; they are cheap but of an inferior quality.

Weight,  $236\frac{1}{2}$  cubic inches = 3 lbs. 3 ozs.

Cubic foot = 23 lbs.  $4\frac{2}{3}$  ozs.

134. BUA KRAS (*Aleurites moluccana*, Willd.). An evergreen tree 40 to 60 feet high. Wood dull white, grain coarse, fairly hard, splits slightly in drying. Wood of no general use.

Weight, 227.5 cubic inches = 5 lbs.  $14\frac{3}{4}$  ozs.

Cubic foot = 44 lbs.  $15\frac{1}{2}$  ozs.

135. BALEK ADAP (*Croton argyratus*, Bl.). An evergreen tree. Wood white, grain coarse, very soft, does not split in drying. Used for common work.

Weight, 238.4 cubic inches = 4 lbs.  $0\frac{1}{2}$  oz.

Cubic foot = 29 lbs.  $3\frac{1}{2}$  ozs.

136. TAKUL (*Croton caudatus*, Geisel, var. *malaccana*). A more or less scudent shrub. Wood whitish, grain medium, fairly hard, splits slightly in drying. Uses not stated.

Weight, 231 cubic inches = 6 lbs.  $6\frac{3}{4}$  ozs.

Cubic foot = 49 lbs.  $4\frac{1}{2}$  ozs.

137. BALEK ANGEN (*Mallotus cochinchinensis*, Lour.). A small evergreen tree. Wood reddish white, grain coarse, soft, splits slightly in drying. Used for common work.

Weight, 244 cubic inches = 5 lbs.  $0\frac{1}{4}$  oz.

Cubic foot = 35 lbs.  $8\frac{1}{4}$  ozs.

138. MUDANG KLABOO (*Endospermum malaccense*, Muell. Arg.). A tree. Wood whitish orange, becoming more red towards the centre, grain very coarse, soft, splits slightly in drying. Uses not stated.

Weight, 224 cubic inches = 5 lbs. 12 ozs.

Cubic foot = 44 lbs. 5 ozs.

#### Urticaceæ.

##### (Tribe II.—Celtideæ.)

139. MUDANG AMPASTABOO (*Gironniera nervosa*, Planch.). A tree attaining 70 feet. Wood faint yellowish white, grain coarse, very soft, splits deeply in drying. Used for common work.

Weight, 232.97 cubic inches = 4 lbs. 5 ozs.

Cubic foot = 31 lbs. 15 ozs.

140. NARONG (JANTAN) (*Trema amboinensis*, Bl.). A small evergreen tree. Wood yellowish white, grain medium, soft, does not split in drying. Uses not stated.

Weight,  $225\frac{3}{4}$  cubic inches = 4 lbs.  $0\frac{1}{4}$  oz.

Cubic foot = 30 lbs.  $11\frac{3}{4}$  ozs.

##### Tribe IV.—Moreæ.

141. TAMPÉNIS (JANTAN) (*Sloetia Wallichii*, King MSS.). A tree. Wood dull red, grain fine with a slightly natural polish, very hard, does not split in drying. Very scarce and valuable for beams.

Weight 193.5 cubic inches = 7 lbs. 6 ozs.

Cubic foot = 65 lbs. 13 ozs.



Tribe V.—*Artocarpeæ*.

142. TAMPONEE or TAMPOONEE (*Artocarpus rigida*, Bl.). A tree 50 to 80 feet high. Wood orange red, grain coarse, soft, does not split in drying. Used for furniture, beams, &c.

Weight, 210 cubic inches = 4 lbs. 13½ ozs.

Cubic foot = 39 lbs. 11½ ozs.

143. TAMPONG (*Artocarpus Gomeziana*, Wall. var. *Griffithii*, King MSS.). A tree. Wood whitish or whitish yellow, grain medium, soft, does not split in drying. Uses not stated.

Weight, 153 cubic inches = 4 lbs. 7 ozs.

Cubic foot = 50 lbs. 1¾ ozs.

144. KLEDANG (*Artocarpus? lanceafolia*, Roxb.). A tree 60 to 80 feet high. Wood reddish olive brown, grain very coarse, soft, does not split in drying. Very durable under ground. The favourite wood for Chinese coffins.

Weight 167·89 cubic inches = 3 lbs. 14 ozs.

Cubic foot = 39 lbs. 14 ozs.

145. MURSAWA (*Artocarpus*, sp.). A very large tree. Wood reddish white, grain medium, soft, splits in drying. Used for dug-out canoes.

Weight, 241½ cubic inches = 7 lbs. 9¾ ozs.

Cubic foot = 54 lbs. 7 ozs.

146. MEYKO (*Artocarpus*, sp.). Wood a remarkable clear gamboge colour, grain medium, fairly hard, splits very slightly in drying. Used for the lids of Chinese coffins.

Weight, 220½ cubic inches = 6 lbs. 5½ ozs.

Cubic foot = 49 lbs. 11 ozs.

*Cupuliferæ*.

147. BRANGAN (JANTAN) (*Quercus spicata*, Smith). An evergreen tree. Wood brownish white, with darker stains and lines, grain very coarse, fairly hard, splits in drying. Uses not stated.

Weight, 233 cubic inches = 5 lbs. 7 ozs.

Cubic foot = 43 lbs.

According to Gamble the wood of this species is used in Assam for building and in Darjeeling for charcoal.

148. KAMPANENG (*Quercus pruinosa*, Bl.). Wood whitish or yellowish olive with darker streaks, grain medium, fairly hard, splits slightly in drying. Uses not stated.

Weight, 262 cubic inches = 8 lbs. 12¼ ozs.

Cubic foot = 57 lbs. 14 ozs.

149. BRANGAN (BUTTEENA) (*Quercus*, sp.). Wood white with faint brownish streaks, grain very coarse, fairly hard, splits considerably in drying. Used for house beams.

Weight, 253 cubic inches = 5 lbs. 5 ozs.

Cubic foot = 36 lbs. 4½ ozs.

150. KATAK TANGGA (*Castanopsis javanica*, A. DC.). A large evergreen tree. Wood dull dark red, grain medium, fairly hard, splits slightly in drying. Used for the manufacture of bowls and other domestic utensils.

Weight, 210·1 cubic inches = 7 lbs. 1¾ ozs.

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## CXLIx.—COTTON IN WEST AFRICA.

It is well known that Cotton is widely distributed in West Africa, but it receives little or no cultural attention, and the produce is chiefly used for making native cloths. The export of Cotton has only lately begun to receive attention. The samples of West African Cotton received in this country have, however, been favourably received, and it is evident that much could be done to extend the cultivation by judicious action on the part of the local authorities and by the introduction and distribution of seed of good and suitable varieties of the Cotton plant. If once the cultivation could be generally taken up by the native population, and especially in districts where the industry is more or less familiar to the people, there are good grounds for believing that West African Cotton would eventually become an important article of export. In the following correspondence attention is drawn to the subject of Cotton-growing generally in West Africa; and an account is given of an attempt which has lately been made to introduce and cultivate experimentally the best forms of Egyptian Cotton. This latter may or may not be suitable to the circumstances of West Africa. The value is, however, so high that it has been thought desirable to attempt its cultivation in West Africa, and the results of the experiment, as also indeed of the general effort made to introduce West African Cotton to commerce, will be watched with interest.

ROYAL GARDENS, KEW, to COLONIAL OFFICE.

[Extract.]

Royal Gardens, Kew,  
22nd October 1889.

SIR,

As regards a supply of seed of Egyptian Cotton for West Africa, as none is obtainable in this country at the present time, the best course would be to apply through the Foreign Office for the assistance of the Agent and Consul-General at Cairo in the matter. The cultivation of Egyptian Cotton in West Africa was suggested in the first instance in connection with Lagos, and I enclose a copy of the correspondence addressed to Kew by Mr. Alvan Millson, in which the advantages of cultivating Egyptian Cotton in West Africa are fully stated. In applying to the Foreign Office for a supply of Egyptian Cotton seed it would be well to ask for about 40 pounds by weight in order that some of the seed might be supplied to Lagos and to other Colonies disposed to try it.

I am, &c.

(Signed) D. MORRIS,

The Hon. R. H. Meade, C.B.

Mr. ALVAN MILLSON to ROYAL GARDENS, KEW.

Hotel Windsor, Victoria Street,  
Westminster, S.W.

DEAR SIR,

8th June 1889.

I ENCLOSE a letter from a friend of mine who has made a special study of Egyptian Cotton in its application to ring and ordinary spinning.



From his remarks it would appear that the flood lands of the Niger basin and coast lagoons of West Africa offer suitable conditions for the extension of the supply of this valuable article of commerce, the scarcity and high price of which render its cultivation an exceedingly lucrative occupation.

Believe me, &c.  
(Signed) ALVAN MILLSON.

D. Morris, Esq., M.A., F.L.S.

[Enclosure.]

MESSRS. SAMUEL WHITLEY & Co. to Mr. ALVAN MILLSON.

Hansom Lane Cotton Mill, Halifax,  
7th June 1889.

DEAR SIR,

WE venture to call your attention to the desirability of extending the growth of that class of Cotton now only produced in Egypt. This Cotton has many advantages in length, strength, and fineness of fibre over that grown in America, and commands a much higher price; at present its production is limited to the Nile valley, where there is no room for extension to meet the increasing demand, and where the crop is at times almost ruined by a "low Nile," causing a large advance in price and its consequent derangement of trade.

The price obtained, which varies from 6*d.* to 10*d.* per pound for ordinary qualities, must give a large return to the planters, for Indian Cottons are grown, ginned, shipped, and sold for 3*d.* per pound.

The requirements of the crop appear to be, an alluvial soil; a regular supply of water to the roots and bright weather during ripening; careful picking to prevent the mixture of leaf with the fibre.

The writer has carefully noted the conditions in Egypt, and cannot see why this crop should not be extended to other parts of Africa.

We are, &c.  
(Signed) S. WHITLEY & Co.

Mr. Alvan Millson.

COLONIAL OFFICE to ROYAL GARDENS, KEW.

SIR,

Downing Street, 1st November 1889.

WITH reference to your letter of the 22nd ultimo, I am directed by Lord Knutsford to acquaint you that the Foreign Office have been requested to instruct Her Majesty's Agent and Consul-General at Cairo to obtain 40 lbs. of Egyptian Cotton seed for transmission to the West African Colonies.

Lord Knutsford has desired that the seed should be forwarded to you, and he will be much obliged if you will undertake its apportionment among the various Colonies in such amounts as you may think most desirable.

I am further to request that you will state the exact amounts sent to each Colony, so that the total cost may be properly divided by the Crown Agents.

I am, &c.  
(Signed) R. H. MEADE.

The Director, Royal Gardens, Kew.

## ROYAL GARDENS, KEW, to COLONIAL OFFICE.

SIR,

Royal Gardens, Kew, January 22, 1890.

WITH reference to your letter of 1st November on the subject of obtaining a supply of Egyptian Cotton seed for transmission to certain Colonies, I am desired by Mr. Thiselton Dyer to inform you that he has recently received, at the request of Sir Evelyn Baring, a supply of Cotton seed from the British Commissioner of the Egyptian State Domains.

2. This seed has been divided into six lots, and apportioned as follows :—To Gambia and Lagos, one-fourth each; to Sierra Leone, Gold Coast, Windward Islands, and Leeward Islands, one-eighth each.

3. The small portion of seed selected for the West Indian Colonies is likely to prove of great service in such islands as Carriacou, Antigua, and the Virgin Islands.

4. It would be desirable to furnish the Governors of all the Colonies to which seed is sent with a copy of the correspondence enclosed in my letter of the 22nd October last, in order that they may have before them the special importance attached to this Egyptian Cotton seed. The time for sowing the seed and the treatment of the crop, in the absence of instructions to the contrary, should follow those which obtain locally for ordinary Cotton.

5. The seed for Lagos was taken out by Sir Alfred Moloney on Saturday last. The remaining portion of the seed, contained in five small boxes addressed to the Governors of the Gold Coast, Sierra Leone, Gambia, Leeward and Windward Islands, will be forwarded to the Crown Agents for transmission to their destination with the least possible delay.

I am, &amp;c.

(Signed) D. MORRIS.

This Egyptian Cotton seed consists of two varieties, A. "Ashmonni," B. "Bahmieh," a portion of each variety is included in the consignments mentioned above.

The Hon. R. H. Meade, C.B.

## COLONIAL OFFICE to ROYAL GARDENS, KEW.

SIR,

Downing Street, March 19, 1890.

I AM directed by Lord Knutsford to transmit to you a copy of a Despatch from the Governor of Sierra Leone, forwarding a sample of Cotton collected at Mafweh, on the Bum River, and to state that his Lordship would be much obliged if you would be good enough to obtain the opinion of an expert as to its commercial value.

I am, &amp;c.

(Signed) R. H. MEADE.

The Director,  
Royal Gardens, Kew.



[ENCLOSURE.]

Mr. ALLDRIDGE to the GOVERNOR OF SIERRA LEONE.

SIR,

Sulymah, February 6, 1890.

IN accordance with your Excellency's instructions to me of the 15th ultimo, No. 31, I have now the honour to forward to the Hon. the Colonial Secretary a sample bag of Cotton.

This particular sample was obtained at Mafweh by me.

I find that this class of Cotton is not the wild or bush Cotton, but that it is planted by the natives (usually between Cassada) for the manufacture of country cloths; it is not, however, cultivated as an article of trade in the raw state.

As I have already had the honour of informing your Excellency, the cultivation of this Cotton is so simple, the yield so prolific, and the growth of the crop so rapid, I am of opinion that when once it became an article of local marketable value, it would be cultivated to an important extent, and it should, I venture to think, soon become a great industry in this Colony provided the price obtainable would be such as to induce the native community to take the matter up.

It would, no doubt, be an advantage if the Cotton could be purchased from the growers as it is picked from the shrub, without being ginned, which, in the absence of special machinery is a laborious operation, although it is not an insuperable difficulty.

I have, &amp;c.

(Signed) T. J. ALLDRIDGE,  
Travelling Commissioner.

His Excellency  
Lieut.-Colonel Maltby.

ROYAL GARDENS, KEW, to the MANCHESTER CHAMBER OF COMMERCE.

SIR,

Royal Gardens, Kew, March 21, 1890.

I AM desired by Mr. Thistelton Dyer to inform you that he has received from the Secretary of State for the Colonies a specimen of Cotton collected at Mafweh on the Bum River, West Coast of Africa. This Cotton is grown by the natives for the manufacture of country cloths, and it appears not to come into commerce in the raw state.

2. It would be interesting to learn the value of this cotton, and with this view Mr. Thistelton Dyer would be glad if you would be good enough to obtain the opinion of the members of your Chamber upon it. A sample of the Cotton is forwarded to your address to-day by parcel post.

3. At the same time I am desired to ask your opinion upon the advisability of endeavouring to introduce the cultivation of what is known as Egyptian Cotton into our Colonies in West Africa, and upon the special points in regard to this Cotton which render it specially sought for by certain buyers in the English market.

I have, &amp;c.

(Signed) D. MORRIS.

The Secretary,  
The Manchester Chamber of Commerce,  
Manchester.



MANCHESTER CHAMBER OF COMMERCE to ROYAL GARDENS, KEW.

Chamber of Commerce, Manchester,

SIR,

May 1, 1890.

I THANK you for the letters of March 21st and April 24th, written by your direction, and for the sample of Cotton grown near the Bum River, West Africa, you were also good enough to forward to this Chamber. It was only yesterday that I was able to complete the information requisite to give a full answer to your inquiries.

This Cotton is of good quality, and is worth to-day about 6*d.* per pound in Liverpool. Already about 2,300 bales per annum are imported into that port, and, so acceptable is it to Lancashire spinners who have used it, that they would gladly welcome a very much larger supply than is now available. There is a good demand for it, and the only complaints respecting it, of which I can hear, are that the supply is scanty and intermittent, and that occasionally it is not so clean and free from impurity as it should be.

With regard to the question of endeavouring to introduce the cultivation of Egyptian Cotton into our Colonies in West Africa, I find that the prospect of doing so, with success, depends largely, if not mainly, upon the facilities which may be available for watering the plant. The successful cultivation of Cotton in Egypt appears to be due (apart from climatic considerations) chiefly to careful irrigation. The qualities which mainly give to Egyptian Cotton its high value as a raw material for spinning are, the length, fineness, and strength of the staple. I need hardly say that English spinners would be greatly pleased to have another source of supply of Egyptian Cotton.

On behalf of the President of this Chamber I desire to thank you for the interest you have shown in this important question of Cotton supply, and to say that we shall be very pleased to hear from you as to the progress of the efforts which you are making for the extension of Cotton culture in West Africa.

I am, &c.

(Signed) ELIJAH HELM,

W. T. Thiselton Dyer, Esq., C.M.G., F.R.S.,  
Director, Royal Gardens, Kew.

Secretary.

ROYAL GARDENS, KEW, to COLONIAL OFFICE.

SIR,

Royal Gardens, Kew, 5 May 1890.

I AM desired by Mr. Thiselton Dyer to acknowledge the receipt of your letter of the 19th March, with a copy of a Despatch from the Governor of Sierra Leone on the subject of a sample of Cotton grown by natives at Mafweh, on the Bum River, West Coast of Africa.

2. The sample, as received, was forwarded to the Manchester Chamber of Commerce, and a copy of a report received from the secretary is enclosed for the information of the Secretary of State.

3. It appears that West African Cotton is received at Liverpool to the extent of 2,300 bales per annum. A much larger supply would be readily taken up, as this special kind is very acceptable to Lancashire spinners. These facts are of very encouraging character, and should be widely known in the Colonies concerned.



4. It will be within your recollection that the extension of Cotton-growing in West Africa has on several occasions been recommended by this establishment, and in my letter of the 22nd October last it was suggested also to try Egyptian Cotton, as likely to be successfully grown there. Seed of this Cotton obtained through the Foreign Office was distributed to the Gambia, Gold Coast, Sierra Leone, and Lagos, as mentioned in my letter of the 22nd January last.

The Hon. R. H. Meade C.B.

I am, &c.  
(Signed) D. MORRIS.

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